

REPORT

on

One-Day Workshop on ‘Molecular Biology and Proteomics’

Organized at

General Shivdev Singh Diwan Gurbachan Singh

Khalsa College, Patiala, Punjab

on

24th February 2025

by



Department of Biotechnology and Bioinformatics

Jaypee University of Information Technology

Waknaghhat, Solan

On 24th February 2025, a One Day Workshop was organized by **Department of Biotechnology and Bioinformatics, Jaypee University of Information Technology, Waknaghat, Solan (H.P.)** in collaboration with **General Shivdev Singh Diwan Gurbachan Singh Khalsa College, Patiala, Punjab** in the domain of '**Molecular Biology and Proteomics**'.

The workshop was arranged by Prof. Sudhir Kumar HoD, BT & BI, JUIT and Dr. Nipunjot Kaur, HoD, Department of Biotechnology, Khalsa College, as Coveners. Dr. Rahul Shrivastava & Dr. Jitendraa Vashistt from Deptt. of BTBI JUIT, were the Resource Person for the entire workshop. Ms. Akansha Nayyar and Ms. Alefia Jaret, Ph.D. scholars from the Dept. BTBI, JUIT also assisted in the practical demonstrations and hands-on sessions as Technical Experts.

More than 50 students of B.Sc. (Biotechnology) participated in the workshop. Faculty members from Khalsa College, Shimla accompanied the students and actively participated in the workshop. The main objective of the workshop was to educate and motivate students for exploration of different arenas in science, and provide them live demonstration and training on novel areas and topics related to Molecular Biology and Proteomic Technologies.

The workshop covered key insights into Molecular Biology and the latest advancements in Proteomics, providing students with a deeper understanding of these fascinating fields. In addition, the resource person also engaged a career counseling session for the students, helping them explore potential career paths and opportunities in the biotech industry. Placement and higher related queries from the students were also addressed and the students were provided guidance related to PG programs being run in JUIT.

The workshop was conducted by the resource persons from the Department of Biotechnology & Bioinformatics, JUIT, Waknaghat. Dr. Rahul Shrivastava provided a practical demonstration of cloning methods used in Molecular Biology including Blue-White Screening used for selection of recombinant vector during cloning of foreign insert. Dr. Jitendraa Vashistt provided a live practical session on modern-day technologies used in Proteomics including hands-on performance of Sodium Dodecyl Sulfate-Polyacrylamide Gel Electrophoresis (SDS-PAGE), a technique used to separate proteins based on their molecular weight. The sessions were followed by hands-on practice by the students on the techniques demonstrated, assisted by faculty and staff from Khalsa College, Patiala and Ph.D. scholars from Department of Biotechnology, JUIT, Solan.

Khalsa College, Patiala, administration thanked the JUIT administration and the Resource Persons for their efforts and support. JUIT administration, staff, research scholars and provided their support for making the workshop a great success. JUIT Vice Chancellor Prof. Rajendra Kumar Sharma and Dr. Dharminder Singh Ubha, Principal, Khalsa College, Patiala expressed their delight over successful conduct of the workshop under the MoU signed between JUIT and Khalsa College, Patiala.

Thanks

Dr. Rahul Shrivastava

Dr. Jitendraa Vashistt



One Day Hands-On Workshop

MOLECULAR BIOLOGY AND PROTEOMICS

Organized by

Jaypee University of Information Technology (JUIT) , Waknaghat , Solan

&

Giani Shivdev Singh Dewan Gurbachan Singh Khalsa College, Patiala, Punjab

PATRON

**Shri Manu Bhaskar Gaur
Chief Executive Officer, JUIT, Solan**

**Prof. R.K.Sharma
Vice Chancellor, JUIT, Solan**

**Dr. Dharminder Singh Ubha
Principal, Giani Shivdev Singh Dewan Gurbachan
Singh Khalsa College, Patiala, Punjab**

Convenor

**Prof. (Dr.) Sudhir Kumar
Professor and Head, Department of Biotechnology
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Resource Persons

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(Session on:- Molecular Biology)**

**Dr. Jitendraa Vashistt
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(Session on :- Proteomics)**

Target Audience

- Undergraduate/Postgraduate, Science Students

DATE & TIME

24th February, 2025

Time: 10:00 AM - 4:00 PM

<https://www.juit.ac.in/biotechnology-bioinformatics>











One-Day Hands-On Workshop on Molecular Biology and Proteomics Held at Khalsa College, Patiala

PT News
Patiala, March 1



Department of Biotechnology, General Shivdev Singh Dewan Gurbachan Singh Khalsa College, Patiala, in collaboration with Jaypee University of Information Technology (JUIT), Waknaghat, Solan, successfully organized a One-Day Hands-On Workshop on Molecular Biology and Proteomics and two extension lectures on Topics Blue-White Screening and SDS-PAGE (Sodium Dodecyl Sulfate Polyacrylamide Gel Electrophoresis), Principle and Working. The event provided an opportunity for students and faculty members to gain hands-on experience in advanced biotechnological techniques. The workshop featured distinguished Resource Persons Prof. (Dr.) Rahul Shrivastava and Dr. Jatinder Vashishth, experts in the field of Molecular Biology and Proteomics. Dr. Rahul Shrivastava delivered an insightful lecture on Blue-White Screening, a widely used technique



for the selection of recombinant bacterial colonies. He explained the fundamental principles behind this method, including a-complementation of β -galactosidase, the role of X-gal, and how this screening technique aids in distinguishing recombinant from non-recombinant colonies. The session provided students with a deeper understanding of molecular cloning strategies used in genetic engineering. Dr. Jatinder Vashishth conducted a session on SDS-PAGE (Sodium Dodecyl Sulfate Polyacrylamide Gel Electrophoresis), explaining its principle and working mechanism. He discussed the role of SDS

in protein denaturation, molecular weight determination, and protein separation based on size. His demonstration of the technique allowed participants to grasp the practical aspects of protein analysis, an essential tool in proteomics research. The hands-on training sessions were designed to provide participants with real-time exposure to laboratory techniques, reinforcing theoretical knowledge with practical applications. The event concluded with an interactive Q&A session where students engaged with the speakers to clarify doubts and discuss research possibilities in the field. Dr.

Dharminder Singh Ubha, Principal, Khalsa College Patiala, commended the Department of Biotechnology for organizing such a valuable lecture and hands-on workshop. He emphasized the importance of such workshops in preparing students for research and industrial applications in biotechnology. The workshop received an overwhelming response from participants, who found it both educational and inspiring. With such initiatives, Khalsa College, Patiala, continues to uphold its commitment to academic excellence and research-driven learning.

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